SEQUENCE LISTING

<110> Skinner, Michael K.

Patton, Jodi L.

<120> A METHOD OF DETERMINING TUMOR CHARACTERISTICS BY

DETERMINING ABNORMAL COPY NUMBER OR EXPRESSION LEVEL OF

LIPID-ASSOCIATED GENES

<130> PATRICK EAGLEMAN: EMBOL-X 252/124

<140>

<141>

<160> 95

<170> PatentIn Ver. 2.0

<210> 1

<211> 2045

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2045)

<223> The sequence of the cDNA coding for

1-acylglycerol-3-phosphate acyltransferase

<400> 1

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<210> 2

<211> 1554

<212> DNA

<213> Homo sapiens



<220>

<221> gene

<222> (1)..(1554)

<223> The sequence of the cDNA coding for Aldehyde
      dehydrogenase (5 family, member A1)



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atcaacaatg aatggcaaga tgcagtcagc aagaagacct tcccgacggt caaccctacc 180

accggggagg tcatcgggca cgtggctgaa ggtgaccggg ctgatgtgga tcgggccgtg 240

aaagcagccc gggaagcctt ccgcctgggg tccccatggc gccggatgga tgcctctgag 300

cggggccggc tgctgaacct cctggcagac ctagtggagc gggatcgagt ctacttggcc 360

tcactcgaga ccttggacaa tgggaagcct ttccaagagt cttacgcctt ggacttggat 420

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caggcactcc aggccgggac cgtgtgggta aacacctaca acatcgtcac ctgccacacg 1440

ccatttggag ggtttaagga atctggaaac gggagggagc tgggtgagga tgggcttaag 1500

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<210> 3

<211> 2051

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2051)

<223> The sequence of the cDNA coding for

Choline/ethanolamine phosphotransferase

<400> 3

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caagatccat gagtgggcat cgatcaacaa ggaaaagatg tggagattct cacccggagt 180

ccccagtggg cttcgggcat atgagtacta caggatgtgt attaaataaa ttgtttcagt 240

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ggcaaacgta tgtttctgga acattgcgat ttggaataat tgatgtgact gaagtgcaaa 780

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ccatattttc ctgtacaaat tacttccgtg taatcttcac aggtggtgtt ggcaaaaatg 960

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tctttattat tggtaacacg ccctaactat cctgtgtgag aatgggaatt caagtccca 1560
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catgcagaat aatgtggtaa ctttgtcaat ttcccatttt atttttttaa ataaatatat 2040

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<211> 3758

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3758)

<223> The sequence of the cDNA coding for Diacylglycerol
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cccgagaggg ctgcgcaggc gggaagacgc cagaggccag cttcggtccc ccttctgtct 180

ctcggttcct ctttcctccc aagtaaggga ataaaccgcg aagaaggagc gccccgggcc 240

accgcgcaac caagtgttgc ctggtgagga agagccagga cttctgaatt taccttgaat 300

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atcactgccc tttagccact cacataaagt ttaaaaatgg gtgaagaacg gtgggtctcc 540

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<211> 2470

<212> DNA

<213> Homo sapiens

<220>

<221> gene

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<223> The sequence of the cDNA coding for

Dihydroxyacetone phosphate acyltransferase

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<211> 2757

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2757)

<223> The sequence of the cDNA coding for EDG-1

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ccgcaagaac atttccaagg ccagccgcag ctctgagaat gtggcgctgc tcaagaccgt 1020

aattatcgtc ctgagcgtct tcatcgcctg ctgggcaccg ctcttcatcc tgctcctgct 1080

ggatgtgggc tgcaaggtga agacctgtga catcctcttc agagcggagt acttcctggt 1140
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gcgtcgggcc ttcatccgga tcatgtcctg ctgcaagtgc ccgagcggag actctgctgg 1260

caaattcaag cgacccatca tcgccggcat ggaattcagc cgcagcaaat cggacaattc 1320

ctcccacccc cagaaagacg aaggggacaa cccagagacc attatgtctt ctggaaacgt 1380

caactcttct tcctagaact ggaagctgtc caccaccgg aagcgctctt tacttggtcg 1440

ctggccaccc cagtgtttgg aaaaaaatct ctgggcttcg actgctgcca gggaggagct 1500

gctgcaagcc agagggagga aggggagaa tacgaacagc ctggtggtgt cgggtgttgg 1560

tgggtagagt tagttcctgt gaacaatgca ctgggaaggg tggagatcag gtcccggcct 1620

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agaatcttgt gtgattcatt tcaagcaaca acatgttgta ttttgttgtg ttaaaagtac 2400

ttttcttgat ttttgaatgt atttgtttca ggaagaagtc attttatgga tttttctaac 2460

ccgtgttaac ttttctagaa tccaccctct tgtgcccttta agcattactt taactggtag 2520

ggaacgccag aactttttaag tccagctatt cattagatag taattgaaga tatgtataaa 2580

tattacaaag aataaaaata tattactgtc tctttagtat ggttttcagt gcaattaaac 2640

cgagagatgt cttgttttttt taaaaagaat agtatttaat aggtttctga cttttgtgga 2700

tcattttgca catagcttta tcaacttttta aacattaata aactgatttt tttaaag    2757
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<210> 7

<211> 1217

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1217)

<223> The sequence of the cDNA coding for EDG-2

<400> 7

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ctgacaccta cagcatcagg tacacagctt ctcctagcat gacttcgatc tgatcagcaa 60

acaagaaaat ttgtctcccg tagttctggg gcgtgttcac cacctacaac cacagagctg 120

tcatggctgc catctctact tccatccctg taatttcaca gccccagttc acagccatga 180

atgaaccaca gtgcttctac aacgagtcca ttgccttctt ttataaccga agtggaaagc 240

atcttgccac agaatggaac acagtcagca agctggtgat gggacttgga atcactgttt 300

gtatcttcat catgttggcc aacctattgg tcatggtggc aatctatgtc aaccgccgct 360

tccattttcc tatttattac ctaatggcta atctggctgc tgcagacttc tttgctgggt 420

tggcctactt ctatctcatg ttcaacacag acccaatac tcggagactg actgtcagca 480

catggctcct tcgtcagggc ctcattgaca ccagcctgac ggcatctgtg gccaacttac 540

tggctattgc aatcgagagg cacattacgg ttttccgcat gcagctccac acacggatga 600

gcaaccggcg ggtagtggtg gtcattgtgg tcatctggac tatggccatc gttatgggtg 660

ctatacccag tgtgggctgg aactgtatct gtgatattga aaattgttcc aacatggcac 720

ccctctacag tgactcttac ttagtcttct gggccatttt caacttggtg acctttgtgg 780

taatggtggt tctctatgct cacatctttg gctatgttcg ccagaggact atgagaatgt 840

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tggtcattgt gcttgggggcc tttatcatct gctggactcc tggattggtt ttgttacttc 960

tagacgtgtg ctgtccacag tgcgacgtgc tggcctatga gaaattcttc cttctccttg 1020

ctgaattcaa ctctgccatg aaccccatca tttactccta ccgcgacaaa gaaatgagcg 1080
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ccacctttag gcagatcctc tgctgccagc gcagtgagaa ccccaccggc cccacagaag 1140

gctcagaccg ctcggcttcc tccctcaacc acaccatctt ggctggagtt cacagcaatg 1200

atcactctgt ggtttag   1217

<210> 8

<211> 1137

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1137)

<223> The sequence of the cDNA coding for EDG-3

<400> 8

atggcaactg ccctcccgcc gcgtctccag ccggtgcggg ggaacgagac cctgcgggag 60

cattaccagt acgtggggaa gttggcgggc aggctgaagg aggcctccga gggcagcacg 120

ctcaccaccg tgctcttctt ggtcatctgc agcttcatcg tcttggagaa cctgatggtt 180

ttgattgcca tctggaaaaa caataaattt cacaaccgca tgtacttttt cattggcaac 240

ctggctctct gcgacctgct ggccggcatc gcttacaagg tcaacattct gatgtctggc 300

aagaagacgt tcagcctgtc tcccacggtc tggttcctca gggagggcag tatgttcgtg 360

gcccttgggg cgtccacctg cagcttactg gccatcgcca tcgagcggca cttgacaatg 420

atcaaaatga ggccttacga cgccaacaag aggcaccgcg tcttcctcct gatcgggatg 480

tgctggctca ttgccttcac gctgggcgcc ctgcccattc tgggctggaa ctgcctgcac 540

aatctccctg actgctctac catcctgccc ctctactcca gaaagtacat tgccttctgc 600

atcagcatct tcacggccat cctggtgacc atcgtgatcc tctacgcacg catctacttc 660

ctggtgaagt ccagcagccg taaggtggcc aaccacaaca ctcggagcg gtccatggca 720

ctgctgcgga ccgtggtgat tgtggtgagc gtgttcatcg cctgctggtc cccactcttc 780

atcctcttcc tcattgatgt ggcctgcagg gtgcaggcgt gccccatcct cttcaaggct 840

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gccagcaagg agatgcggcg ggccttcttc cgtctggtct gcaactgcct ggtcagggga 960

cggggggccc gcgcctcacc catccagcct gcgctcgacc caagcagaag taaatcaagc 1020

agcagcaaca atagcagcca ctctccgaag gtcaaggaag acctgccCca cacagacccc 1080

tcatcctgca tcatggacaa gaacgcagca cttcagaatg ggatcttctg caactga 1137

<210> 9

<211> 1056

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1056)

<223> The sequence of the cDNA coding for EDG-4

<400> 9

atggtcatca tgggccagtg ctactacaac gagaccatcg gcttcttcta taacaacagt 60

ggcaaagagc tcagctccca ctggcggccc aaggatgtgg tcgtggtggc actggggctg 120

accgtcagcg tgctggtgct gctgaccaat ctgctggtca tagcagccat cgcctccaac 180

cgccgcttcc accagcccat ctactacctg tcggcaatc tggccgcggc tgacctcttc 240

gcgggcgtgg cctacctctt cctcatgttc cacactggtc ccgcacagc ccgactttca 300

cttgagggct ggttcctgcg gcagggcttg ctggacacaa gcctcactgc gtcggtggcc 360

acactgctgg ccatcgccgt ggagcggcac cgcagtgtga tggccgtgca gctgcacagc 420

cgcctgcccc gtggccgcgt ggtcatgctc attgtgggcg tgtgggtggc tgccctgggc 480

ctggggctgc tgcctgccca ctcctggcac tgcctctgtg ccctggaccg ctgctcacgc 540

atggcacccc tgctcagccg ctcctatttg gccgtctggg ctctgtcgag cctgcttgtc 600

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cgcatggcag agcatgtcag ctgccacccc cgctaccgag agaccacgct cagcctggtc 720

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ctgctcctgg atggtttagg ctgtgagtcc tgcaatgtcc tggctgtaga aaagtacttc 840

ctactgttgg ccgaggccaa ctcactggtc aatgctgctg tgtactcttg ccgagatgct 900

gagatgcgcc gcaccttccg ccgccttctc tgctgcgcgt gcctccgcca gtccacccgc 960

gagtctgtcc actatacatc ctctgcccag ggaggtgcca gcactcgcat catgcttccc 1020

gagaacggcc acccactgat ggactccacc ctttag   1056

<210> 10

<211> 1062

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1062)

<223> The sequence of the cDNA coding for EDG-5

<400> 10

atgggcagct tgtactcgga gtacctgaac cccaacaagg tccaggaaca ctataattat 60

accaaggaga cgctggaaac gcaggagacg acctcccgcc aggtggcctc ggccttcatc 120

gtcatcctct gttgcgccat tgtggtggaa aaccttctgg tgctcattgc ggtggcccga 180

aacagcaagt ccactcggc aatgtacctg tttctgggca acctggccgc ctccgatcta 240

ctggcaggcg tggccttcgt agccaatacc ttgctctctg gctctgtcac gctgaggctg 300

acgcctgtgc agtggtttgc ccgggagggc tctgcctcca tcacgctctc ggcctctgtc 360

ttcagcctcc tggccatcgc cattgagcgc acgtggccat tgccaaggt caagctgtat 420

ggcagcgaca agagctgccg catgcttctg ctcatcgggg cctcgtggct catctcgctg 480

gtcctcggtg gcctgcccat ccttggctgg aactgcctgg ccacctcga ggcctgctcc 540

actgtcctgc ctctctacgc caagcattat gtgctgtgcg tggtgaccat cttctccatc 600

atcctgttgg ccatcgtggc cctgtacgtg cgcatctact gcgtggtccg ctcaagccac 660

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cggccgctgc agtgctggcg gccggggggtg ggggtgcaag gacggaggcg ggtcgggacc 960

ccgggccacc acctcctgcc actccgcagc tccagctccc tggagagggg catgcacatg 1020

cccacgtcac ccacgtttct ggagggcaac acggtggtct ga   1062

<210> 11

<211> 1566

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1566)

<223> The sequence of the cDNA coding for EDG-6

<400> 11

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ccaacagctg gcggccggcg ggcacagccg gctcattgtt ctgcactaca accactcggg 120

ccggctggcc gggcgcgggg ggccggagga tggcggcctg ggggccctgc gggggctgtc 180

ggtggccgcc agctgcctgg tggtgctgga gaacttgctg gtgctggcgg ccatcaccag 240

ccacatgcgg tcgcgacgct gggtctacta ttgcctggtg aacatcacgc tgagtgacct 300

gctcacgggc gcggcctacc tggccaacgt gctgctgtcg ggggcccgca ccttccgtct 360

ggcgcccgcc cagtggttcc tacgggaggg cctgctcttc accgccctgg ccgcctccac 420

cttcagcctg ctcttcactg caggggagcg ctttgccacc atggtgcggc cggtggccga 480

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gagcggggcc accaagacca gccgcgtcta cggcttcatc ggcctctgct ggctgctggc 540

cgcgctgctg gggatgctgc ctttgctggg ctggaactgc ctgtgcgcct ttgaccgctg 600

ctccagcctt ctgcccctct actccaagcg ctacatcctc ttctgcctgg tgatcttcgc 660

cggcgtcctg gccaccatca tgggcctcta tggggccatc ttccgcctgg tgcaggccag 720

cgggcagaag gccccacgcc cagcggcccg ccgcaaggcc cgccgcctgc tgaagacggt 780

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cagcctcgcc tgtatgggga gcagggaacg ggacaggccc ccatggtctt cccggtggcc 1320

tctcgggget tctgacgcca aatgggcttc ccatggtcac cctggacaag gaggtaacca 1380

ccccacctcc ccgtaggagc agagagcacc ctggtgtggg ggcgagtggt tccccacaac 1440

cccgcttctg tgtgattctg gggaagtccc ggcccctctc tgggcctcag tagggctccc 1500

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aaaaaa                                                              1566


<210> 12

<211> 1148

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(1148)
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<223> The sequence of the cDNA coding for EDG-7

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gacaagcaca tggacttttt ttataatagg agcaacactg atactgtcga tgactggaca 120

ggaacaaagc ttgtgattgt tttgtgtgtt gggacgtttt tctgcctgtt tatttttttt 180

tctaattctc tggtcatcgc ggcagtgatc aaaaacagaa aatttcattt ccccttctac 240

tacctgttgg ctaatttagc tgctgccgat ttcttcgctg gaattgccta tgtattcctg 300

atgtttaaca caggcccagt ttcaaaaact ttgactgtca accgctggtt tctccgtcag 360

gggcttctgg acagtagctt gactgcttcc ctcaccaact tgctggttat cgccgtggag 420

aggcacatgt caatcatgag gatgcgggtc catagcaacc tgaccaaaaa gagggtgaca 480

ctgctcattt tgcttgtctg ggccatcgcc atttttatgg gggcggtccc cacactgggc 540

tggaattgcc tctgcaacat ctctgcctgc tcttccctgg cccccattta cagcaggagt 600

taccttgttt tctggacagt gtccaacctc atggccttcc tcatcatggt tgtggtgtac 660

ctgcggatct acgtgtacgt caagaggaaa accaacgtct tgtctccgca tacaagtggg 720

tccatcagcc gccggaggac acccatgaag ctaatgaaga cggtgatgac tgtcttaggg 780

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gtcttagg 1148

<210> 13

<211> 1606

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1606)

<223> The sequence of the cDNA coding for

Glycerol-3-phosphate dehydrogenase

<400> 13

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tttttttttt tttttttttt ttgggtggcg gggggttgca agtgggaagc ctgctgttca   60

gctgccgggg ctctccgcct cccccacct gtatgaggct gggtctgggg aacctgtgct  120

cagcattcca cccctggag cttgggcttg gtcttccctg cgggtccctg cgctgacatt  180

caggcgggga gccaggaggc ctggcgcgcc tccagagccc gccggggggag ccgggcgagg  240

gttctgggct ctgacggcgg ggtcgcaggg tcgcccgcct cctggacacg tctgtaggcc  300

tagggaagcc tgccggccgg gaggtacaga gtaggagaag ccagatccca gggcggacaa  360

cgagaagtcg tcaggctaag aaatggcatt tcaaaaggca gtgaaaggga cgattcttgt  420

tggaggaggt gctcttgcaa ctgttttagg actttctcag tttgctcatt acagaaggaa  480

acaaatgaac ctggcctatg ttaaagcagc agactgcatt tcagaaccag ttaacaggga  540

gcctccttcc agagaagctc agctactgac tttgcaaaat acatctgaat ttgatatcct  600

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ctgggtagga atcaagctgt atgatttggt tgcaggaagc aattgcctaa aaagcagtta  960

tgtcctcagc aaatcaagag cccttgaaca tttcccaatg ctccagaagg acaaactggt 1020

aggagcaatt gtctactatg acggacaaca taacgatgca cggatgaacc ttgccattgc 1080

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cctcacaggg caggaatttg acgtgagagc caaatgtgtt atcaatgcca cgggacctttt 1260
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cacggactct gtgcgcaaaa tggatgataa agacgcagca gctatctgcc agccaagtgc 1320

tggtgtccat attgtgatgc ctggttatta cagcccagag agcatgggac ttcttgaccc 1380

agcgaccagt gatgggcgag ttattttctt cttaccctgg caaaagatga cgatcgctgg 1440

cactactgat actccaactg atgttacaca ccatccaatt ccttcagaag aagatatcaa 1500

cttcattttg aatgaagtgc gtaattacct gagttgtgat gttgaagtga gaagagggga 1560

tgtcctggca gcatggagtg gaatccgtcc tcttgttaca gacccc   1606

<210> 14

<211> 2417

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2417)

<223> The sequence of the cDNA coding for

      Lyosphospholipase I

<400> 14

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cgctgcccgc catcgtgccc gccgcccgga aggccaccgc tgcggtgatt ttcctgcatg 120

gattgggaga tactgggcac ggatgggcag aagcctttgc aggtatcaga agttcacata 180

tcaaatatat ctgcccgcat gcgcctgtta ggcctgttac attaaatatg aacgtggcta 240

tgccttcatg gtttgatatt attgggcttt caccagattc acaggaggat gaatctggga 300

ttaaacaggc agcagaaaat ataaaagctt tgattgatca agaagtgaag aatggcattc 360

cttctaacag aattattttg ggagggtttt ctcagggagg agctttatct ttatatactg 420

cccttaccac acagcagaaa ctggcaggtg tcactgcact cagttgctgg cttccacttc 480

gggcttcctt ccacagggt cctatcggtg gtgctaatag agatatttct attctccagt 540

gccacgggga ttgtgaccct ttggttcccc tgatgtttgg ttctcttacg gtggaaaaac 600

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ttgattgacg tcactaagag gccttgtgta gaagtacacc agcatcattg tagtagagtg 780

taaacctttt cccatgccca gtcttcaaat ttctaatgtt ttgcagtgtt aaaatgtttt 840

gcaaatacat gccgataaca cagatcaaat aatatctcct catgagaaat ttatgatctt 900

ttaagtttct atacatgtat tcttataaga cgacccagga tctactatat tagaatagat 960

gaagcaggta gcttcttttt tctcaaatgt aattcagcaa aataatacag tactgccacc 1020

agattttta ttacatcatt tgaaaattag cagtatgctt aatgaaaatt tgttcaggta 1080

taaatgagca gttaagatat aaacaattta tgcatgctgt gacttagtct atggatttat 1140

tccaaaattg cttagtcacc atgcagtgtc tgtattttta tatatgtgtt catatataca 1200

taatgattat aatacataat aagaatgagg tggtattaca ttattcctaa taatagggat 1260

aatgctgttt attgtcaaga aaaagtaaaa tcgttctctt caattaatgg ccctttatt 1320

ttgggaccag gctttattt tccctgatat tatttctatt taatactctt ttctctcaag 1380

aaaaaaaaaa aagtttgttt tttctttatt gtccttcata gcaggccaag tattgcctct 1440

ctgcaataga cagctactgt caatacatgc tgtaatttga cattctgggt cacagatata 1500

aggtatttaa aatctattta tgctttatag agaaaccaga cattaaaact tcatgcacta 1560

cttatttcga attactgtac cttatccaaa tttacaccta gctattagga tcttcaaccc 1620

aggtaacagg aataattctg tggtttcatt tttctgtaaa caactgaaag aataattaga 1680

tcatattcta gtatgttctg aaatatcttt aagactgatc ttaaaaacta acttctaaga 1740

tgatttcatc ttctcatagt atagagttta ctttgtacac gttgaaacca actactgtag 1800

aagatgagga atctattgta atttttgct ttattttcat ctgccagtgg acttatttga 1860

attttcactt tagtcaaatt attttttgta ttagtttttg atgcagacat aaaaatagca 1920

atcattttaa attgtcaaaa tttccagatt actggtaaaa attatttgaa aacaaactta 1980

tgggtaataa aggctagtca gaaccctata ccataaagtg tagttaccat acagattaat 2040

atgtagcaaa aatgtatgct tgatatttct caactgtgtt aattttctg ctgtattcca 2100

gctgaccaaa acaatattaa gaatgcatct ttataaatgg gtgctaattg ataatggaaa 2160

taatttagta atggactata caggatgtta ataatgaagc catatgttta tgtctggatt 2220

taaaaatttt aaacaatcat ttactatgtc atttttcttt accttgaaga acataaactg 2280
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ttatttcact tctacaaatc agcaagatat tatttatggc aagaaatatt ccattgaaat 2340

attgtgctgt aacatgggaa agtgtaaatg tttttcatgg tttctatcaa tgtgaaataa 2400

aatttaattc tgaaaaa   2417

<210> 15

<211> 1192

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1192)

<223> The sequence of the cDNA coding for Human

        Lysophospholipase Homolog

<400> 15

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ttggggccgc ccagatgagg gaacagcccg atttgcctgg ttctgattct ccaggctgtc 120

gtggttgtgg aatgcaaacg ccagcacata atggaaacag gacctgaaga cccttccagc 180

atgccagagg aaagttcccc caggcggacc ccgcagagca ttccctacca ggacctccct 240

cacctggtca atgcagacgg acagtacctc ttctgcaggt actggaaacc cacaggcaca 300

cccaaggccc tcatctttgt gtcccatgga gccggagagc acagtggccg ctatgaagag 360

ctggctcgga tgctgatggg gctggacctg ctggtgttcg cccacgacca tgttggccac 420

ggacagagcg aaggggagag gatggtagtg tctgacttcc acgttttcgt cagggatgtg 480

ttgcagcatg tggattccat gcagaaagac taccctgggc ttcctgtctt ccttctgggc 540

cactccatgg gaggcgccat cgccatcctc acggccgcag agaggccggg ccacttcgcc 600

ggcatggtac tcatttcgcc tctggttctt gccaatcctg aatctgcaac aactttcaag 660

gtccttgctg cgaaagtgct caaccttgtg ctgccaaact tgtccctcgg gcccatcgac 720

tccagcgtgc tctctcggaa taagacagag gtcgacattt ataactcaga ccccctgatc 780

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tgccgggcag ggctgaaggt gtgcttcggc atccaactgc tgaatgccgt ctcacgggtg 840

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ctatgtgaca gcaagggggc ctacctgctc atggagttag ccaagagcca ggacaagact 960

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tccccaccct gaatgcattg gccggtgccc ggctcatggt ctgggggatg caggcagggg 1140

aagggcagag atggcttctc agatatggct tgcaaaaaaa aaaaaaaaaa aa         1192
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<210> 16

<211> 2333

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2333)

<223> The sequence of the cDNA coding for

    N-acylsphingosine amidohydrolase

<400> 16

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ccgtcagctg tgccgtcgcg cagcacgcgc cgccgtggac agaggactgc agaaaatcaa 120

cctatcctcc ttcaggacca acgtacagag gtgcagttcc atggtacacc ataaatcttg 180

acttaccacc ctacaaaaga tggcatgaat tgatgcttga caaggcacca atgctaaagg 240

ttatagtgaa ttctctgaag aatatgataa atacattcgt gccaagtgga aaagttatgc 300

aggtggtgga tgaaaaattg cctggcctac ttggcaactt cctggccct tttgaagagg 360

aaatgaaggg tattgccgct gttactgata tacctttagg agagattatt tcattcaata 420

tttttttatga attatttacc atttgtactt caatagtagc agaagacaaa aaaggtcatc 480
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taatacatgg gagaaacatg gattttggag tatttcttgg gtggaacata aataatgata 540

cctgggtcat aactgagcaa ctaaaacctt taacagtgaa tttggatttc caaagaaaca 600

acaaaactgt cttcaaggct tcaagctttg ctggctatgt gggcatgtta acaggattca 660

aaccaggact gttcagtctt acactgaatg aacgtttcag tataaatggt ggttatctgg 720

gtattctaga atggattctg ggaaagaaag atgccatgtg gatagggttc ctcactagaa 780

cagttctgga aaatagcaca agttatgaag aagccaagaa tttattgacc aagaccaaga 840

tattggcccc agcctacttt atcctgggag gcaaccagtc tggggaaggt tgtgtgatta 900

cacgagacag aaaggaatca ttggatgtat atgaactcga tgctaagcag ggtagatggt 960

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atgatgtcct gtcaacaaaa cctgtcctca acaagctgac cgtatacaca accttgatag 1140

atgttaccaa aggtcaattc gaaacttacc tgcgggactg ccctgaccct tgtataggtt 1200

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tggtgaactc cacctccgtg gaataaatgg agattcagcg tgggtgttga atccagcacg 1560

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tctaaatagc acttttgggg gttcaagaag taatcagtat gcaaagcaat cttttataca 1860

ataattgaag tgttcccttt ttcataatta ctctacttcc cagtaaccct aaggaagttg 1920

ctaacttaaa aaactgcatc ccacgttctg ttaatttagt aaataaacaa gtcaaagact 1980

tgtggaaaat aggaagtgaa cccatatttt aaattctcat aagtagcatt gatgtaataa 2040

acaggttttt agtttgttct tcagattgat agggagtttt aaagaaattt tagtagttac 2100

taaaattatg ttactgtatt tttcagaaat caaactgctt atgaaaagta ctaatagaac 2160

ttgttaacct ttctaacctt cacgattaac tgtgaaatgt acgtcatttg tgcaagaccg 2220
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tttgtccact tcattttgta taatcacagt tgtgttcctg acactcaata aacagtcact 2280

ggaaagagtg ccagtcagca gtcatgcacg ctgataaaaa aaaaaaaaaa aaa   2333

<210> 17

<211> 1016

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1016)

<223> The sequence of the cDNA coding for Phospholipase

    A2

<400> 17

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gcccaaggaa gttgctcatg ggagcagacc cctagagcag gatttgaggc caggccaaag 120

agaaccccag agatgaaagg cctcctccca ctggcttggt tcctggcttg tagtgtgcct 180

gctgtgcaag gaggcttgct ggacctaaaa tcaatgatcg agaaggtgac agggaagaac 240

gccctgacaa actacggctt ctacggctgt tactgcggct ggggcggccg aggaacccccc 300

aaggatggca ccgattggtg ctgttgggcg catgaccact gctatgggcg gctggaggag 360

aagggctgca acattcgcac acagtcctac aaatacagat tcgcgtgggg cgtggtcacc 420

tgcgagcccg ggcccttctg ccatgtgaac ctctgtgcct gtgaccggaa gctcgtctac 480

tgcctcaaga gaaacctacg gagctacaac ccacagtacc aatactttcc caacatcctc 540

tgctcctagg cctccccagc gagctcctcc cagaccaaga cttttgttct gtttttctac 600

aacacagagt actgactctg cctggttcct gagagaggct cctaagtcac agacctcagt 660

ctttctcgaa gcttggcgga ccccagggc cacactgtac cctccagcga gtcccaggag 720

agtgactctg gtcataggac ttggtagggt cccagggtcc ctaggcctcc acttctgagg 780

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gcagccctc  tggtgccaag  agctctcctc  caactcaggg  ttggctgtgt  ctctttctt   840

ctctgaagac  agcgtcctgg  ctccagttgg  aacactttcc  tgagatgcac  ttacttctca  900

gcttctgcga  tcagattatc  atcaccacca  ccctccagag  aattttacgc  aagaagagcc  960

aaattgactc  tctaaatctg  gtgtatgggt  attaaataaa  attcattctc  aaggct      1016


<210> 18

<211> 3609

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(3609)

<223> The sequence of the cDNA coding for Phospholipase

      D1 (phosphatidylcholine specific)


<400> 18

ggcacgagga  gccctgagag  tccgccgcca  acgcgcaggt  gctagcggcc  ccttcgccct  60

gcagcccctt  tgcttttact  ctgtccaaag  ttaacatgtc  actgaaaaac  gagccacggg  120

taaataccctc  tgcactgcag  aaaattgctg  ctgacatgag  taatatcata  gaaaatctgg  180

acacgcggga  actccacttt  gagggagagg  aggtagacta  cgacgtgtct  cccagcgatc  240

ccaagataca  agaagtgtat  atcccttttct  ctgctattta  taacactcaa  ggatttaagg  300

agcctaatat  acagacgtat  ctctccggct  gtccaataaa  agcacaagtt  ctggaagtgg  360

aacgcttcac  atctacaaca  agggtaccaa  gtattaatct  ttacactatt  gaattaacac  420

atggggaatt  taaatggcaa  gttaagagga  aattcaagca  ttttcaagaa  tttcacagag  480

agctgctcaa  gtacaaagcc  tttatccgca  tccccattcc  cactagaaga  cacacgttta  540

ggaggcaaaa  cgtcagagag  gagcctcgag  agatgcccag  tttgccccgt  tcatctgaaa  600

acatgataag  agaagaacaa  ttccttggta  gaagaaaaca  actggaagat  tacttgacaa  660

agatactaaa  aatgcccatg  tatagaaact  atcatgccac  aacagagttt  cttgatataa  720
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gatctggagg acacagaata ccaggcttga attgctgtgg tcagggaaga gcctgctaca 840

gatggtcaaa aagatggtta atagtgaaag attccttttt attgtatatg aaaccagaca 900

gcggtgccat tgccttcgtc ctgctggtag acaaagaatt caaaattaag gtggggaaga 960

aggagacaga aacgaaatat ggaatccgaa ttgataatct ttcaaggaca cttattttaa 1020

aatgcaacag ctatagacat gctcggtggt ggggaggggc tatagaagaa ttcatccaga 1080

aacatggcac caactttctc aaagatcatc gatttgggtc atatgctgct atccaagaga 1140

atgctttagc taaatggtat gttaatgcca aaggatattt tgaagatgtg gcaaatgcaa 1200

tggaagaggc aaatgaagag attttttatca cagactggtg gctgagtcca gaaatcttcc 1260

tgaaacgccc agtggttgag ggaaatcgtt ggaggttgga ctgcattctt aaacgaaaag 1320

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tcaatagtga atacaccaag aggactttga tgcgtctaca tcccaacata aaggtgatga 1440

gacacccgga tcatgtgtca tccaccgtct atttgtgggc tcaccatgag aagcttgtca 1500

tcattgacca atcggtggcc tttgtgggag ggattgacct ggcctatgga aggtgggacg 1560

acaatgagca cagactcaca gacgtgggca gtgtgaagcg ggtcacttca ggaccgtctc 1620

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accacctgca cgacgcagat agcatcagca gcattgacag cacctccagt tattttaatc 1860

actatagaag tcatcacaat ttaatccatg gtttaaaacc ccacttcaaa ctctttcacc 1920

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cggctcgtga tgtggcacgt cacttcatcc agcgctggaa cttcacaaaa attatgaaat 2220

caaaatatcg gtccctttct tatccttttc tgcttccaaa gtctcaaaca acagcccatg 2280

agttgagata tcaagtgcct gggtctgtcc atgctaacgt acagttgctc cgctctgctg 2340

ctgattggtc tgctggtata aagtaccatg aagagtccat ccacgccgct tacgtccatg 2400
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acagggaaaa ccagaaatac cgggtatatg tcgtgatacc acttctgcca gggttcgaag 2580

gagacatttc aaccggcgga ggaaatgctc tacaggcaat catgcacttc aactacagaa 2640

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tcgtatccaa cccaaggacc ttttggaatg actggggagg gctgcagtca cattgatgta 3480

aggactgtaa acatcagcaa gactttataa ttccttctgc ctaacttgta aaagggggc 3540

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gccgaattc                                                        3609
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<210> 19

<211> 2893

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2893)

<223> The sequence of the cDNA coding for Phospholipase

D1 glycosylphosphatidylinositol specific

<400> 19

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tgctgatgat cgtgatggct tctctctgcc atagaggttc atcgtgtggc ctttcaacgc 120

acatagaaat cggacacaga gctctggagt ttcttcatct tcacaatggg catgttaact 180

acaaagagct gttactagaa caccaggatg catatcaggc tggaaccgtg tttcctgatt 240

gtttttaccc tagcctctgc aaaggaggaa aattccatga tgtgtctgag agcactcact 300

ggactccgtt tcttaacgca agcgttcatt atatccgaga gaactatccc cttccctggg 360

agaaggacac agagaaactg gtagctttct tgtttggaat tacttctcat atggtagcag 420

atgtcagctg gcatagtctg ggcattgaac aaggattcct taggaccatg ggagctattg 480

attttcacgg ctcctattct gaggctcatt cagctggtga ttttggagga gatgtgttga 540

gccagtttga atttaatttt aattaccttg cacgacgctg gtatgtgcca gtcaaagatc 600

tgctgggaat ttatgagaaa ctctatggtc gagaagtcat cactgaaaat gtaattgttg 660

attgttcaca tatccagttc ttagaaatgt atggtgagat gctagctgtt tccaagttat 720

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gccagcaaaa ccacacccag ggctcgaaaa tgcagaaaaa tgattttcac agaaatttga 960

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acgtaaggac aatgttcata ggtggctctc agttgtcaca gaagcacatc tctagcccct 1140

tagcatctta cttcttgtca tttccttatg caaggcttgg ctgggcaatg acctcagctg 1200

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ttgacctgga cctggacaag gaggcccacg ggatccttga aggtttccag ccctcaggtc 1380

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atctggtcat tggctcccct tttgcaccag gtggagggaa gcagaaggga attgtggctg   1680

cgtttattc tggccccagc ctgagcaaca aagagaaact gaacgtggag gcggccaact   1740

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tggacaacag aaccttgctg ctggttggga gcccgacctg gaagaatgcc agcaggctgg   1860

gccgtttgtt acacatccga gatgagaaaa agagccttgg gagggtgtat ggctacttcc   1920

caccaaacag ccaaagctgg tttaccattg ttggagacaa ggcaatgggg aaactgggta   1980

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<210> 20

<211> 1362

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1362)

<223> The sequence of the cDNA coding for Phosphatidic
      Acid Phosphatase type 2B

<400> 20

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cgatttaggg ttgacagagg aaagcagagg cgcgcaggag gagcagaaaa caccaccttc 120

tgcagttgga ggcaggcagc cccggctgca ctctagccgc cgcgcccgga gccggggccg 180

acccgccact atccgcagca gcctcggcca ggaggcgacc cgggcgcctg ggtgtgtggc 240

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acaacaaccc gaggaggagc ggcagcaagc gggtgctgct catctgcctc gacctcttct 420

gcctcttcat ggcgggcctc cccттcctca tcatcgagac aagcaccatc aagccttacc 480

accgagggtt ttactgcaat gatgagagca tcaagtaccc actgaaaact ggtgagacaa 540

taaatgacgc tgtgctctgt gccgtgggga tcgtcattgc catcctcgcg atcatcacgg 600

gggaattcta ccggatctat tacctgaaga agtcgcggtc gacgattcag aacccctacg 660

tggcagcact ctataagcaa gtgggctgct tcctctttgg ctgtgccatc agccagtctt 720

tcacagacat gccaaagtg tccatagggc gcctgcgtcc tcacttcttg agtgtctgca 780

accctgattt cagccagatc aactgctctg aaggctacat tcagaactac agatgcagag 840

gtgatgacag caaagtccag gaagccagga agtccttctt ctctggccat gcctccttct 900

ccatgtacac tatgctgtat ttggtgctat acctgcaggc ccgcttcact ggcgaggag 960

cccgcctgct ccggcccctc ctgcagttca ccttgatcat gatggccttc tacacgggac 1020

tgtctcgcgt atcagaccac aagcaccatc ccagtgatgt tctggcagga tttgctcaag 1080

gagccctggt ggcctgctgc atagttttct tcgtgtctga cctcttcaag actaagacga 1140

cgctctccct gcctgcccct gctatccgga aggaaatcct ttcacctgtg gacattattg 1200

acaggaacaa tcaccacaac atgatgtagg tgccacccac ctcctgagct gtttttgtaa 1260

aatgactgct gacagcaagt tcttgctgct ctccaatctc atcagacagt agaatgtagg 1320

gaaaaacttt tgcccgactg attttttaaaa aaaaaaaaaa aa   1362

<210> 21

<211> 1043

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1043)

<223> The sequence of the cDNA coding for Phosphatidic

      Acid Phosphatase type 2a

<400> 21

cccggcccgg gctcgagaat caagggcctc ggccgccgtc ccgcagctca gtccatcgcc 60

cttgccgggc agcccgggca gagaccatgt ttgacaagac gcggctgccg tacgtggccc 120

tcgatgtgct ctgcgtgttg ctggctggat tgccttttgc aatttttact tcaaggcata 180

ttacttcaag gcataccccc ttccaacgag gagtattctg taatgatgag tccatcaagt 240

acccttacaa agaagacacc ataccttatg cgttattagg tggaataatc attccattca 300

gtattatcgt tattattctt ggagaaaccc tgtctgttta ctgtaacctt ttgcactcaa 360

attcctttat caggaataac tacatagcca ctatttacaa agccattgga accttttat 420

ttggtgcagc tgctagtcag tccctgactg acattgccaa gtattcaata ggcagactgc 480

ggcctcactt cttggatgtt tgtgatccag attggtcaaa aatcaactgc agcgatggtt 540

acattgaata ctacatatgt cgagggaatg cagaaagagt taaggaaggc aggttgtcct 600

tctattcagg ccactcttcg ttttccatgt actgcatgct gtttgtggca ctttatcttc 660

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aagccaggat gaagggagac tgggcaagac tcttacgccc cacactgcaa tttggtcttg 720

ttgccgtatc catttatgtg ggcctttctc gagtttctga ttataaacac cactggagcg 780

atgtgttgac tggactcatt cagggagctc tggttgcaat attagttgct gtatatgtat 840

cggatttctt caaagaaaga acttctttta aagaaagaaa agaggaggac tctcatacaa 900

ctctgcatga aacaccaaca actgggaatc actatccgag caatcaccag ccttgaaagg 960

cagcagggtg cccaggtgaa gctggcctgt tttctaaagg aaaatgattg ccacaaggca 1020

agaggatgca tctttcttcc tgg                                        1043


<210> 22

<211> 5397

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(5397)

<223> The sequence of the cDNA coding for

       Phosphatidylinositol-3-Kinase (class 2, gamma

       polypeptide)


<400> 22

gaattcggca cgagcacttc cttctcggct agattatctg aaactgttgt cggttcttga 60

gatgatacta ccaccgaatg tctgtgtttc attgtctagt ccaacctgta ttgtggatat 120

ctacaacgtt ccggcaatag ttttgcaggt gcatcacatt tttgtttttg ttttgggagg 180

aaaagggagg gcacggcagc caggcttcat attcctacaa gtgcatgctt caagattact 240

gtacttacag tgtttccaac atcttctcat aaaaggggaa agcttcatag cctcaaccat 300

gaaggaaacc agtcgcatag ggcatggagc tggagaacta taaacagccc gtggtgctga 360

gagaggacaa ctgccgaagg cgccggagga tgaagccgcg cagtgctgcc agcctgtcct 420
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ccatggagct catcccatc gagttcgtgc tgcccaccag ccagcgcaaa tgcaagagcc 480

ccgaaacggc gctgctgcac gtggccggcc acggcaacgt ggagcagatg aaggcccagg 540

tgtggctgcg agcgctggag accagcgtgg cggcggactt ctaccaccgg ctgggaccgc 600

atcacttcct cctgctctat cagaagaagg ggcagtggta cgagatctac gacaagtacc 660

aggtggtgca gactctggac tgcctgcgct actggaaggc cacgcaccgg agcccgggcc 720

agatccacct ggtgcagcgg cacccgccct ccgaggagtc ccaagccttc cagcggcagc 780

tcacggcgct gattggctat gacgtcactg acgtcagcaa cgtgcacgac gatgagctgg 840

agttcacgcg ccgtggcttg gtgaccccgc gcatggcgga ggtggccagc cgcgacccca 900

agctctacgc catgcacccg tgggtgacgt ccaagcccct cccggagtac ctgtggaaga 960

agattgccaa caactgcatc ttcatcgtca ttcaccgcag caccaccagc cagaccatta 1020

aggtctcacc cgacgacacc cccggcgcca tcctgcagag cttcttcacc aagatggcca 1080

agaagaaatc tctgatggat attcccgaaa gccaaagcga acaggatttt gtgctgcgcg 1140

tctgtggccg ggatgagtac ctggtgggcg aaacgcccat caaaaacttc cagtgggtga 1200

ggcactgcct caagaacgga gaagagattc acgtggtact ggacacgcct ccagacccgg 1260

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gctaccatga gcagcttacc atccacggca aggaccacga gagtgtgttc accgtgtccc 1380

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ctcggaacac cgacctcaca gttttgtag aggcaaacat ccagcatggg caacaagtcc 1500

tttgccaaag gagaaccagc cccaaaccct tcacagagga ggtgctgtgg aatgtgtggc 1560

ttgagttcag tatcaaaatc aaagacttgc ccaaaggggc tctactgaac ctccagatct 1620

actgcggtaa agctccagca ctgtccagca aggcctctgc agagtccccc agttctgagt 1680

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aaggaagctt caatgctgac aaactcacgt ctgcaactaa cccagacaag gagaactcaa 1860

tgtccatctc cattcttctg gacaattact gccacccgat agccctgcct aagcatcagc 1920

ccacccctga cccggaaggg gaccgggttc gagcagaaat gcccaaccag cttcgcaagc 1980

aattggaggc gatcatagcc actgatccac ttaaccctct cacagcagag gacaaagaat 2040

tgctctggca tttttagatac gaaagcctta agcacccaaa agcatatcct aagctattta 2100

gttcagtgaa atggggacag caagaaattg tggccaaaac ataccaattg ttggccagaa 2160
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gggaagtctg ggatcaaagt gctttggatg ttgggttaac aatgcagctc ctggactgca 2220

acttctcaga tgaaaatgta agagccattg cagttcagaa actggagagc ttggaggacg 2280

atgatgttct gcattacctt ctacaattgg tccaggctgt gaaatttgaa ccataccatg 2340

atagcgccct tgccagattt ctgctgaagc gtggtttaag aaacaaaaga attggtcact 2400

ttttgttttg gttcttgaga agtgagatag cccagtccag acactatcag cagaggttcg 2460

ctgtgattct ggaagcctat ctgaggggct gtggcacagc catgctgcac gactttaccc 2520

aacaagtcca agtaatcgag atgttacaaa aagtcaccct tgatattaaa tcgctctctg 2580

ctgaaaagta tgacgtcagt tcccaagtta tttcacaact taaacaaaag cttgaaaacc 2640

tgcagaattc tcaactcccc gaaagcttta gagttccata tgatcctgga ctgaaagcag 2700

gagcgctggc aattgaaaaa tgtaaagtaa tggcctccaa gaaaaaacca ctatggcttg 2760

agtttaaatg tgccgatcct acagccctat caaatgaaac aattggaatt atctttaaac 2820

atggtgatga tctgcgccaa gacatgctta ttttacagat tctacgaatc atggagtcta 2880

tttgggagac tgaatctttg gatctatgcc tcctgccata tggttgcatt tcaactggtg 2940

acaaaatagg aatgatcgag attgtgaaag acgccacgac aattgccaaa attcagcaaa 3000

gcacagtggg caacacggga gcatttaaag atgaagtcct gaatcactgg ctcaaagaaa 3060

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tgctgatgac aggaatgccc cagttaacaa gcaaagaaga cattgaatat atccgggatg 3480

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gttctatggt ttaaattagc atagcaatca tcgaacttgg atttcaaatg caatagacat 3720

tgtgaaagct ggcatttcag aagtatagct cttttcctac ctgaactctt ccctggagaa 3780

aagatgttgg cattgctgat tgtttggtta agcaatgtcc agtgctagga ttatttgcag 3840
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tttggaataa ttgatgacat ctattttcat ctgggtttag tctcaatttt ggttatcttt 4020

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gagacacaca aacacagcag gagaaatcta aaccgttgtg ccttgacctt cctctgctgg 4260

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ccacaagagt gagttatcta gtatgattag tatagctttc tccagcatgg cagcaggaag 4380

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agattctaga aaatatgaat tagtttccaa atgccttaat tttaaacttt ggcctgaaca 4680

gttttttctt tttcttaatg gaagaagata tttaatatct taaaaatatt ccaagttagg 4740

aagaacacta cttgccttat ccatttccca tttaaaggac ttttaaactt tgacacagtc 4800

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tatctcgtta tttattggag gtattgttta accttagata gaccattaaa ttatttataa 4920

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ctgtttaagt ataatcagat ataaatatat aacttaattt tttaatttta aaaaatagat 5040

acctgtttga ctttgaggta gtccaggcct ttttctttttt tttttttttt aatgtgtgca 5100

aaagcccaaa ggttcctaag cctggctgca aagaagaatc aacagggaca ctttttaaaa 5160

acactcttat cagcctgggg caacacagtg agactccatc tcttaaaaaa aaaattagct 5220

gggtatagtg gtatgtgcct gtagtcccag gtactcagga ggctgaggca ggaggattgc 5280

ctgagcccag gaggtggaaa ctgcagagag tcatgatcat gtccttacac tccagcctgg 5340

ataacagagc gagaccctgt ctcaaaaaaa aaaaaaaaaa aaaaaaaaa actcgag      5397
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<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3424)

<223> The sequence of the cDNA coding for

Phosphatidylinositol-3-kinase (catalytic, alpha

polypeptide)

<400> 23

aggatcagaa caatgcctcc aagaccatca tcaggtgaac tgtggggcat ccacttgatg 60

cccccaagaa tcctagtgga atgtttacta ccaaatggaa tgatagtgac tttagaatgc 120

ctccgtgagg ctacattagt aactataaag catgaactat ttaaagaagc aagaaaatac 180

cctctccatc aacttcttca agatgaatct tcttacattt tcgtaagtgt tacccaagaa 240

gcagaaaggg aagaattttt tgatgaaaca agacgacttt gtgatcttcg gctttttcaa 300

ccatttttaa aagtaattga accagtaggc aaccgtgaag aaaagatcct caatcgagaa 360

attggttttg ctatcggcat gccagtgtgc gaatttgata tggttaaaga tcctgaagta 420

caggacttcc gaagaaatat tcttaatgtt tgtaaagaag ctgtggatct tagggatctt 480

aattcacctc atagtagagc aatgtatgtc tatccgccac atgtagaatc ttcaccagag 540

ctgccaaagc acatatataa taaattggat agaggccaaa taatagtggt gatttgggta 600

atagtttctc caaataatga caagcagaag tatactctga aaatcaacca tgactgtgtg 660

ccagaacaag taattgctga agcaatcagg aaaaaaacta gaagtatgtt gctatcatct 720

gaacaattaa aactctgtgt tttagaatat caggcaagt acattttaaa agtgtgtgga 780

tgtgatgaat acttcctaga aaaatatcct ctgagtcagt ataagtatat aagaagctgt 840

ataatgcttg ggaggatgcc caatttgaag atgatggcta agaaagcct ttattctcaa 900

ctgccaatgg actgttttac aatgccatct tattccagac gcatttccac agctacacca 960

tatatgaatg gagaaacatc tacaaaatcc ctttgggtta taaatagagc actcagaata 1020

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aaaattcttt gtgcaaccta cgtgaatcta aatattcgag acattgacaa gatttatgtt 1080

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ccttgttcca atcccaggtg gaatgaatgg ctgaattatg atatatacat tcctgatctt 1200

cctcgtgctg ctcgactttg cctttccatt tgctctgtta aaggccgaaa gggtgctaaa 1260

gaggaacact gtccattggc atggggaaat ataaacttgt ttgattacac agacactcta 1320

gtatctggaa aaatggcttt gaatctttgg ccagtacctc atggattaga agatttgctg 1380

aaccctattg gtgttactgg atcaaatcca aataaagaaa ctccatgctt agagttggag 1440

tttgactggt tcagcagtgt ggtaaagttc ccagatatgt cagtgattga agagcatgcc 1500

aattggtctg tatcccgaga agcaggattt agctattccc acgcaggact gagtaacaga 1560

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cgagatcctc tctctgaaat cactgagcag gagaaagatt ttctatggag tcacagacac 1680

tattgtgtaa ctatccccga aattctaccc aaattgcttc tgtctgttaa atggaattct 1740

agagatgaag tagcccagat gtattgcttg gtaaaagatt ggcctccaat caaacctgaa 1800

caggctatgg aacttctgga ctgtaattac ccagatccta tggttcgagg ttttgctgtt 1860

cggtgcttgg aaaaatattt aacagatgac aaactttctc agtatttaat tcagctagta 1920

caggtcctaa aatatgaaca atatttggat aacttgcttg tgagattttt actgaagaaa 1980

gcattgacta atcaaaggat tgggcacttt ttcttttggc atttaaaatc tgagatgcac 2040

aataaaacag ttagccagag gtttggcctg cttttggagt cctattgtcg tgcatgtggg 2100

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gacattctca aacaggagag gaaggatgaa acacaaaagg tacagatgaa gtttttagtt 2220

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cctgctcatc aactaggaaa cctcaggctt aaagagtgtc gaattatgtc ttctgcaaaa 2340

aggccactgt ggttgaattg ggagaaccca gacatcatgt cagagttact gtttcagaac 2400

aatgagatca tctttaaaaa tggggatgat ttacggcaag atatgctaac acttcaaatt 2460

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acacaggatt tcttaatagt gattagtaaa ggagcccaag aatgcacaaa gacaagagaa 2940

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tggatcttcc acacaattaa acagcatgca ttgaactgaa agataactga gaaaatgaaa 3240

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taggaattgc acaatccatg aacagcatta gatttacagc aagaacagaa ataaaatact 3360

atataattta aataatgtaa acgcaaacag ggtttgatag cacttaaact agttcatttc 3420

aaaa                                                                  3424


<210> 24

<211> 1201

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(1201)

<223> The sequence of the cDNA coding for Prostate
      Differentiation Factor PLAB


<400> 24

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atggctctca gatgctcctg gtgttgctgg tgctctcgtg gctgccgcat ggggggcgccc 120

tgtctctggc cgaggcgagc cgcgcaagtt tcccgggacc ctcagagttg cacaccgaag 180
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accagagctg ggaagattcg aacaccgacc tcgtcccggc ccctgcagtc cggatactca 300

cgccagaagt gcggctggga tccggcggcc acctgcacct gcgtatctct cgggccgccc 360

ttcccgaggg gctccccgag gcctcccgcc ttcaccgggc tctgttccgg ctgtccccga 420

cggcgtcaag gtcgtgggac gtgacacgac ctctgcggcg tcagctcagc cttgcaagac 480

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cagcgccctg ctgcgtgccc gccagctaca tcccatggt gctcattcaa aagaccgaca 900

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tgatggaact gtgtatttat ttaaaactct ggtgataaaa ataaagctgt ctgaactgtt 1200

c                                                                1201
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<210> 25

<211> 1269

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1269)

<223> The sequence of the cDNA coding for Phosphatidic

    Acid Phosphatase type 2c

<400> 25

gcgacgggac gcgctgggac cggcgtcggg ggtcgcgggg accatgcagc ggaggtgggt 60

cttcgtgctg ctcgacgtgc tgtgcttact ggtcgcctcc ctgcccttcg ctatcctgac 120

gctggtgaac gccccgtaca agcgaggatt ttactgcggg gatgactcca tccggtaccc 180

ctaccgtcca gataccatca cccacgggct catggctggg gtcaccatca cggccaccgt 240

catccttgtc tcggccgggg aagcctacct ggtgtacaca gaccggctct attctcgctc 300

ggacttcaac aactacgtgg ctgctgtata caaggtgctg gggaccttcc tgtttggggc 360

tgccgtgagc cagtctctga cagacctggc caagtacatg attgggcgtc tgaggcccaa 420

cttcctagcc gtctgcgacc ccgactggag ccgggtcaac tgctcggtct atgtgcagct 480

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gggacactct tcctttggga tgtactgcat ggtgttcttg gcgctgtatg tgcaggcacg 600

actctgttgg aagtgggcac ggctgctgcg acccacagtc cagttcttcc tggtggcctt 660

tgccctctac gtgggctaca cccgcgtgtc tgattacaaa caccactgga gcgatgtcct 720

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aaaaaaaaa   1269

<210> 26

<211> 1286

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1286)

<223> The sequence of the cDNA coding for Phosphocholine
        cytidyltransferase

<400> 26

cgaccggacc gggctcgggg gagcgtgagt tgcagttaaa agaagatgga tgcacagtgt 60

tcagccaagg tcaatgcaag gaagaggaga aaagaggcgc ccggacccaa cggggcaaca 120

gaagaagatg gggttccttc caaagtgcag cgctgtgcag tgggcttacg gcaaccagct 180

cctttttctg atgaaattga agttgacttt agtaagccct atgtcagggt aactatggaa 240

gaagccagca gaggaactcc ttgtgagcga cctgtgagag tttatgccga tggaatattt 300

gacttatttc actctggtca cgcccgagct ctgatgcaag cgaagaacct tttccctaat 360

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gtagcccatg atgatattcc ttattcatct gctggcagtg atgatgttta taagcacatc 600

aaggaggcag gcatgtttgc tccaacacag aggacagaag gtatctccac atcagacatc 660

atcacccgaa ttgtgcggga ttatgatgtg tatgcgaggc ggaacctgca gaggggctac 720

acagcaaagg agctcaatgt cagctttatc aacgagaaga ataccactt gcaggagagg 780

gttgacaaag taaaggagaa agtgaaagat gtggaggaaa agtcaaaaga atttgttcag 840

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attggaagtt ttctggaaat gtttggtccg gaaggagcac tgaaacatat gctgaaagag 960

gggaagggcc ggatgctgca ggccatcagc ccgaagcaga gccccagcag cagccctact 1020

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gaagactaat gtttcctccc tcctttcctg tcctcccttt ctgtcccatt accttcagaa 1200

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aagacaactg gggaaagaag acctag                                      1286


<210> 27

<211> 1856

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(1856)

<223> The sequence of the cDNA coding for Phosphate

      cytidylyltransferase 2 (ethanolamine specific)


<400> 27

attgcgggcg gcggcgttcg gagtcgccgg gagctgccag gctgtccgcg ccgccgctgc 60

ggggccatga tccggaacgg gcgcggggct gcaggcggcg cagagcagcc gggcccgggg 120

ggcaggcgcg ccgtgagggt gtggtgcgat ggctgctatg acatggtgca ttacggccac 180

tccaaccagc tgcgccaggc acgggccatg ggtgactacc tcatcgtagg cgtgcacacc 240

gatgaggaga tcgccaagca aaggggccc ccggtgttca ctcaggagga gagatacaag 300

atggtgcagg ccatcaaatg ggtggacgag gtggtgccag cggctcccta cgtcactaca 360

ctagagaccc tggacaaata caactgtgac ttctgtgttc acggcaatga catcaccctg 420

actgtagatg gccgggacac ctatgaggaa gtaaagcagg ctgggaggta cagagaatgc 480

aagcgcacgc aaggggtgtc caccacagac ctcgtgggcc gcatgctgct ggtaaccaaa 540

gcccatcaca gcagccagga gatgtcctct gagtaccggg agtatgcaga cagttttggc 600

aagtgccctg gtgggcggaa cccctggacc ggggtatccc agttcctgca gacatctcag 660

aagatcatcc agtttgcttc tgggaaggag ccccagccag gggagacagt catctatgtg 720

gctggtgcct tcgacctgtt ccacatcggg catgtggact tcctggagaa ggtgcacagg 780
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ctggcagaga ggccctacat catcgcgggc ttacactttg accaggaggt caatcactac 840

aaggggaaga actaccccat catgaatctg catgaacgga ctctgagcgt gctggcctgc 900

cggtacgtgt cagaagtggt gattggagcc ccgtacgcgg tcacagcaga gctcctaagt 960

cacttcaagg tggacctggt gtgtcacggc aagacagaaa ttatccctga cagggatggc 1020

tccgacccat accaggagcc caagagaagg ggcatcttcc gtcagattga cagtggcagc 1080

aacctcacca cagacctcat cgtccagcgg atcatcacca caggttgga gtatgaggcg 1140

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ggtgcctggt ttgcagcagg ctctccgctc tttccagcaa agctgctcag agagggtgtc 1440

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cgctcctgcg tgcgccccca cctggtcccc ggatgccccc accacctgga cagaggccac 1560

actgactgcc cacccagctg tggcgggagg tgcagagcag ggggctttag ggagcagtga 1620

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caacacggtg tcctgccacc cagcgcctgg ctccaggaaa acacgcttgc cttccttccc 1740

ggcagcttcg ccactctcct tatggactct gttctgtttg tacatggctg acggaaatct 1800

ctttggtaca accgaataaa gcctggtggc agtgctgcgc ggggctccca gccaat     1856


<210> 28

<211> 3160

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(3160)

<223> The sequence of the cDNA coding for Phosphatase

      and Tenson Homolog (PTEN)
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<400> 28

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gatgtggcag gactctttat gcgctgcggc aggatacgcg ctcggcgctg ggacgcgact 180

gcgctcagtt ctctcctctc ggaagctgca gccatgatgg aagtttgaga gttgagccgc 240

tgtgaggcga ggccgggctc aggcgaggga gatgagagac ggcggcggcc gcggcccgga 300

gcccctctca gcgcctgtga gcagccgcgg gggcagcgcc ctcggggagc cggccggcct 360

gcggcggcgg cagcggcggc gtttctcgcc tcctcttcgt cttttctaac cgtgcagcct 420

cttcctcggc ttctcctgaa agggaaggtg gaagccgtgg gctcgggcgg gagccggctg 480

aggcgcggcg gcggcggcgg cggcacctcc cgctcctgga gcggggggga gaagcggcgg 540

cggcggcggc cgcggcggct gcagctccag ggagggggtc tgagtcgcct gtcaccattt 600

ccagggctgg gaacgccgga gagttggtct ctcccttct actgcctcca acacggcggc 660

ggcggcggcg gcacatccag ggacccgggc cggtttaaaa cctcccgtcc gccgccgccg 720

cacccccgt ggcccgggct ccggaggccg ccggcggagg cagccgttcg gaggattatt 780

cgtcttctcc ccattccgct gccgccgctg ccaggcctct ggctgctgag gagaagcagg 840

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gccaagcggc ggcagagcga ggggcatcag ctaccgccaa gtccagagcc atttccatcc 960

tgcagaagaa gccccgccac cagcagcttc tgccatctct ctcctccttt ttcttcagcc 1020

acaggctccc agacatgaca gccatcatca agagatcgt tagcagaaac aaaaggagat 1080

atcaagagga tggattcgac ttagacttga cctatattta tccaaacatt attgctatgg 1140

gatttcctgc agaaagactt gaaggcgtat acaggaacaa tattgatgat gtagtaaggt 1200

ttttggattc aaagcataaa aaccattaca agatatacaa tctttgtgct gaaagacatt 1260

atgacaccgc caatttaat tgcagagttg cacaatatcc ttttgaagac cataacccac 1320

cacagctaga acttatcaaa cccttttgtg aagatcttga ccaatggcta agtgaagatg 1380

acaatcatgt tgcagcaatt cactgtaaag ctggaaaggg acgaactggt gtaatgatat 1440

gtgcatattt attacatcgg ggcaaatttt taaaggcaca agaggcccta gatttctatg 1500

gggaagtaag gaccagagac aaaaagggag taactattcc cagtcagagg cgctatgtgt 1560

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attattatag ctacctgtta aagaatcatc tggattatag accagtggca ctgttgtttc 1620

acaagatgat gtttgaaact attccaatgt tcagtggcgg aacttgcaat cctcagtttg 1680

tggtctgcca gctaaaggtg aagatatatt cctccaattc aggacccaca cgacgggaag 1740

acaagttcat gtactttgag ttccctcagc cgttacctgt gtgtggtgat atcaaagtag 1800

agttcttcca caaacagaac aagatgctaa aaaaggacaa aatgtttcac ttttgggtaa 1860

atacattctt cataccagga ccagaggaaa cctcagaaaa agtagaaaat ggaagtctat 1920

gtgatcaaga aatcgatagc atttgcagta tagagcgtgc agataatgac aaggaatatc 1980

tagtacttac tttaacaaaa aatgatcttg acaaagcaaa taaagacaaa gccaaccgat 2040

actttctcc aaattttaag gtgaagctgt acttcacaaa aacagtagag gagccgtcaa 2100

atccagaggc tagcagttca acttctgtaa caccagatgt tagtgacaat gaacctgatc 2160

attatagata ttctgacacc actgactctg atccagagaa tgaacctttt gatgaagatc 2220

agcatacaca aattacaaaa gtctgaattt ttttttatca agagggataa aacaccatga 2280

aaataaactt gaataaactg aaaatggacc tttttttttt taatggcaat aggacattgt 2340

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catccacagg gttttgacac ttgttgtcca gttgaaaaaa ggttgtgtag ctgtgtcatg 2460

tatatacctt tttgtgtcaa aaggacattt aaaattcaat taggattaat aaagatggca 2520

ctttcccgtt ttattccagt tttataaaaa gtggagacag actgatgtgt atacgtagga 2580

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gtttccgaaa ggttttgcta ccattctaat gcatgtattc gggttagggc aatggagggg 2760

aatgctcaga aaggaaataa ttttatgctg gactctggac catataccat ctccagctat 2820

ttacacacac ctttctttag catgctacag ttattaatct ggacattcga ggaattggcc 2880

gctgtcactg cttgttgttt gcgcattttt ttttaaagca tattggtgct agaaaaggca 2940

gctaaaggaa gtgaatctgt attggggtac aggaatgaac cttctgcaac atcttaagat 3000

ccacaaatga agggatataa aaataatgtc ataggtaaga aacacagcaa caatgactta 3060

accatataaa tgtggaggct atcaacaaag aatgggcttg aaacattata aaaattgaca 3120

atgatttatt aaatatgttt tctcaattgt aaaaaaaaaa                       3160


<210> 29
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<211> 1707

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1707)

<223> The sequence of the cDNA coding for

Sphingosine-1-phosphate lyase 1

<400> 29

atgcctagca cagaccttct gatgttgaag gcctttgagc cctacttaga gattttggaa 60

gtatactcca caaaagccaa gaattatgta aatggacatt gcaccaagta tgagccctgg 120

cagctaattg catggagtgt cgtgtggacc ctgctgatag tctggggata tgagtttgtc 180

ttccagccag agagtttatg gtcaaggttt aaaaagaaat gttttaagct caccaggaag 240

atgcccatta ttggtcgtaa gattcaagac aagttgaaca agaccaagga tgatattagc 300

aagaacatgt cattcctgaa agtggacaaa gagtatgtga agctttacc ctcccagggt 360

ctgagctcat ctgctgtttt ggagaaactt aaggagtaca gctctatgga cgccttctgg 420

caagagggga gagcctctgg aacagtgtac agtggggagg agaagctcac tgagctcctt 480

gtgaaggctt atggagattt tgcatggagt aaccccctgc atccagatat cttcccagga 540

ctacgcaaga tagaggcaga aattgtgagg atagcttgtt ccctgttcaa tggggggacca 600

gattcgtgtg gatgtgtgac ttctggggga acagaaagca tactcatggc ctgcaaagca 660

tatcgggatc tggccttga gaaggggatc aaaactccag aaattgtggc tccccaaagt 720

gcccatgctg catttaacaa agcagccagt tactttggga tgaagattgt gcgggtccca 780

ttgacgaaga tgatggaggt ggatgtgagg gcaatgagaa gagctatctc caggaacact 840

gccatgctcg tctgttctac cccacagttt cctcatggtg taatagatcc tgtccctgaa 900

gtggccaagc tggctgtcaa atacaaaata ccccttcatg tcgacgcttg tctgggaggc 960

ttcctcatcg tctttatgga gaaagcagga tacccactgg agcacccatt tgatttccgg 1020

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tcatcattgg tgttgtatag tgacaagaag tacaggaact atcagttctt cgtcgataca 1140

gattggcagg gtggcatcta tgcttcccca accatcgcag gctcacggcc tggtggcatt 1200

agcgcagcct gttgggctgc cttgatgcac ttcggtgaga acggctatgt tgaagctacc 1260

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tttgtttttg ggaatcccca attgtcagtc attgctctgg gatcccgtga ttttgacatc 1380

taccgactat caaacctgat gactgctaag gggtggaact tgaaccagtt gcagttccca 1440

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atgaatggtt ctccaaaacc ccactga                                   1707


<210> 30

<211> 1879

<212> DNA

<213> Homo sapiens


<220>

<221> gene

<222> (1)..(1879)

<223> The sequence of the cDNA coding for Sphingomyelin

       phosphodiesterase 1


<400> 30

cctgccgtgt gccaatccat tgtccacctc tttgaggatg acatggtgga ggtgtggaga 60

cgctcagtgc tgagcccatc tgaggcctgt ggcctgctcc tgggctccac ctgtgggcac 120

tgggacattt tctcatcttg gaacatctct ttgcctactg tgccgaagcc gccccccaaa 180

ccccctagcc ccccagcccc aggtgcccct gtcagccgca tcctcttcct cactgacctg 240
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cactgggatc atgactacct ggagggcacg gaccctgact gtgcagaccc actgtgctgc 300

cgccggggtt ctggcctgcc gcccgcatcc cggccaggtg ccggatactg gggcgaatac 360

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ggccctttttg atatggtgta ctggacagga gacatccccg cacatgatgt ctggcaccag 480

actcgtcagg accaactgcg ggccctgacc accgtcacag cacttgtgag gaagttcctg 540

gggccagtgc cagtgtaccc tgctgtgggt aaccatgaaa gcatacctgt caatagcttc 600

cctcccccct tcattgaggg caaccactcc tcccgctggc tctatgaagc gatggccaag 660

gcttgggagc cctggctgcc tgccgaagcc ctgcgcaccc tcagaattgg ggggttctat 720

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ggggagcttc aggctgctga ggatcgagga gacaaagtgc atataattgg ccacattccc 900

ccagggcact gtctgaagag ctggagctgg aattattacc gaattgtagc caggtatgag 960

aacaccctgg ctgctcagtt ctttggccac actcatgtgg atgaatttga ggtcttctat 1020

gatgaagaga ctctgagccg gccgctggct gtagccttcc tggcacccag tgcaactacc 1080

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tgccgtctgg ctactctttg tgcccagctc tctgcccgtg ctgacagccc tgctctgtgc 1440

cgccacctga tgccagatgg gagcctccca gaggcccaga gcctgtggcc aaggccactg 1500

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agcccaaatg ctgctgtggt tcaaccaggc aagatcatcc ggtgaaagaa ccagtccctg 1620

ggccccaagg atgccgggga aacaggacct tctcctttcc tggagctggt ttagctggat 1680

atgggagggg gtttggctgc ctgtgcccag gagctagact gccttgaggc tgctgtcctt 1740

tcacagccat ggagtagagg cctaagttga cactgccctg ggcagacaag acaggagctg 1800

tcgccccagg cctgtgctgc ccagccagga accctgtact gctgctgcga cctgatgctg 1860

ccagtctgtt aaaataaag                                          1879
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<210> 31

<211> 3553

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3553)

<223> The sequence of the cDNA coding for Phospholipase

C beta 3 (phosphatidylinositol specific)

<400> 31

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ccggcctgat gagttttcct tggaaatctt tgagcggttc ctgaacaagc tgtgtctgcg 120

gccggacatt gacaagatcc tgctggagat aggcgccaag ggcaagccat acctgacgct 180

ggagcagctc atggacttca tcaaccagaa gcaacgcgac ccgagactca cgaagtgct 240

gtacccgccc ctgcggccct cccaggcccg gctgctcatc gaaaagtatg agcccaacca 300

gcagtttctg gagcgagacc agatgtccat ggagggcttt agccgctacc tgggaggcga 360

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gacctcgtcg gtggagatgt accgccaggc actactatgg ggctgccgct gcgtggagct 540

ggacgtgtgg aagggacggc cgcctgagga ggaacccttc attacccacg gcttcaccat 600

gaccacagag gtgcctctgc gcgacgtgct ggaggccatt gccgagactg ccttcaagac 660

ctcgccctac cccgtcatcc tctccttcga gaaccatgtg gactcggcaa agcaacaggc 720

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caagtacccg ctggccccag gcgttcccct gcccagcccc caggacctga tgggccgtat 840

cctggtgaag aacaagaagc ggcaccgacc cagcgcaggt ggcccagaca gcgccgggcg 900

caagcggccc ctggagcaga gcaattctgc cctgagcgag agctccgcgg ccaccgagcc 960

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gaaccgaggc ccctatgttc ttggacctgc tgaccgtgag gatgaggagg aagatgagga 1140

agaggaggaa cagacagacc ccaaaaagcc aactacagat gagggcacag ccagcagcga 1200

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gccgtcctca aaccccaccc ccagcccact ggatgcctcc ccccgccggc ccctggccc 2220

caccacctcc cctgccagca cctccctcag cagcccaggg cagcgtgatg atctcatcgc 2280

cagcatcctc tcagaggtgg cccccacccc gctggatgag ctccgaggtc acaaggctct 2340

ggtcaagctc cggagccggc aagagcgaga cctgcgggag ctgcgcaaga agcatcagcg 2400

gaaggcagtc accctcaccc gccgcctgct ggatggcctg gctcaggcac aggctgaggg 2460

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gattaaccgt cggcacatca ctgagtcagt caactccatc cgtcggctgg aggaggccca 2880

gaagcagcgg catgaccgtc ttgtggctgg gcagcagcag gtcctgcaac agctggcaga 2940

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cccccaggag atccgccgga gcctgctggg cgagatgccg gaggggctgg gggacgggcc 3060

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tttttaact ttttatctag aaattttatt tttttaaacc cggggcaagt acctcagcta 3300

actcccttca tcctcctggg gcccctcctt cctgccctca gtcttaggtt agggccttgg 3360

tcagggcttt gctccctgtg acacccacac cctcgagcta gcagcgtctc ctcccttccc 3420

cgggagagct ggctggagac ttggagctcc gggaagtagg agtcacattt ttttctctat 3480

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cctgttcttc aacatgggcc ag   22

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tgcatttgcc agtcatgtca cc   22

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acttccgcct cttcctgcta atc   23

<210> 65

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aacatactgc cctccctgag gaac   24

<210> 70

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<210> 71

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<210> 72

<211> 24

<212> DNA

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<210> 73

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<210> 77

<211> 20

<212> DNA

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forward primer

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<210> 85

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<400> 85

gcgatatacc aggttgtgcc ag   22

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gtgccaagtg gaaaagttat gcag   24

<210> 87

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<212> DNA

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reverse primer

<400> 87

tgtcaacaga tggacgaaga caag   24

<210> 88

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     forward primer

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ccccatttat cagctccatt gcc   23

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     reverse primer

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catcccctct tctcacttca acatc   25

<210> 90

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<211> 22

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<400> 92

gctctgccaa gacattgact cc   22

<210> 93

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<210> 94

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    forward primer

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<210> 95

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